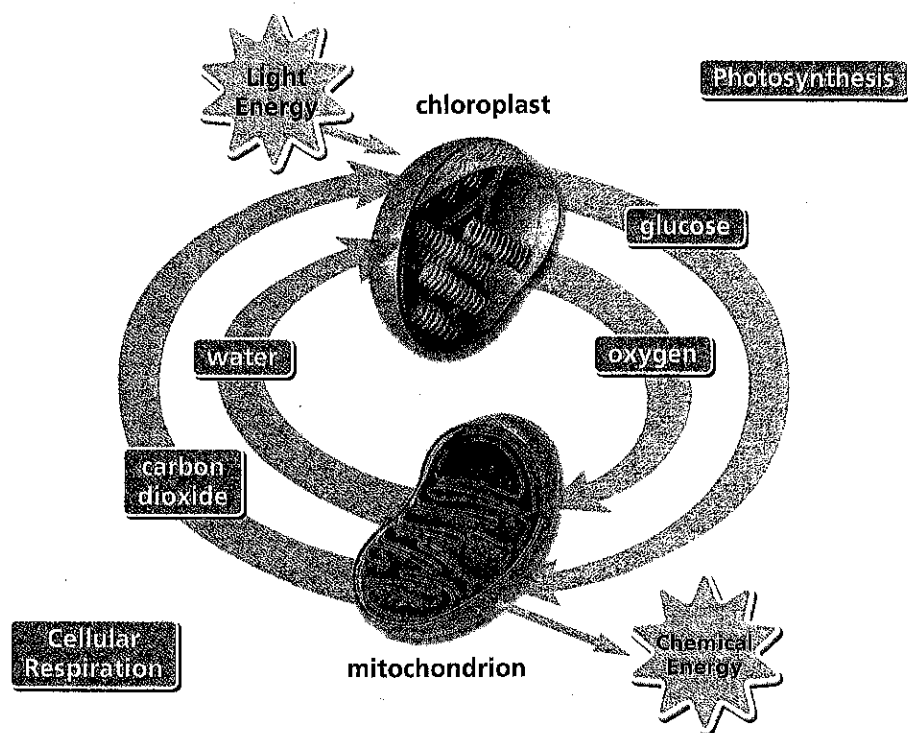


Photosynthesis and Respiration Cycle



You may find it interesting to compare cellular respiration with photosynthesis. The diagram above highlights the cycle that occurs between photosynthesis and cellular respiration. Notice that the starting materials of one process are also the products of the other process. This cycle does not necessarily occur in the same cell, or even in the same organism.

Fermentation

VOCABULARY

Add a word triangle for *fermentation* to your notebook. Your triangle could include a sketch of a loaf of bread.



Fermentation is the process by which cells release energy without oxygen. Recall that in cellular respiration the cell first breaks glucose into smaller molecules. This releases a small amount of energy. Without oxygen, cellular respiration cannot continue. In eukaryotic cells, instead of entering the mitochondria, these smaller molecules stay in the cytoplasm, where fermentation occurs.

There are two main types of fermentation: alcoholic fermentation and lactic acid fermentation. Both types of fermentation break sugars down to small molecules. In the absence of oxygen, different reactions occur that produce either alcohol and carbon dioxide or lactic acid. In both cases, a small amount of energy is released.

CHECK YOUR READING

Use a Venn diagram to compare and contrast fermentation and cellular respiration.

